
Subject: extra ticks on log axes

Posted by [Kevin A. Park](#) on Fri, 22 Feb 2002 21:16:15 GMT

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Hi everybody,

I'm responsible for tending to an IDL application that uses object graphics to make lineplots. I'm running it under IDL 5.4. The application includes a dialog to set the axes ranges so that only the desired portion of the plots and axes is displayed. I use the /EXACT flag when setting the properties of the axes in order to tell IDL to strictly obey the axis range that I specify. I let IDL pick the number of major and minor ticks to display, and where these ticks should be placed. (I.E. the MAJOR flag is not set, the MINOR flag is set to -1, and TICKVALUES is not set.)

However, when an axis has been set to be logarithmic with the /LOG flag, IDL sometimes draws a major tick that is outside of the axis range that I specify. This behavior can even occur when the specified axis range runs over several decades. I have included a demo program at the bottom of this message (heavily based on David Fanning's Xplot program) which illustrates the bad behavior.

Is this behavior a bug in IDL or is there something that I am doing wrong? Thanks...

Kevin Park

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```
-----  
; logticks_demo.pro  
;  
; by Kevin A. Park  
;  
; Based on David Fanning's Xplot program.  
;  
;-----  
PRO XPlot_Exit, event
```

```

    Widget_Control, event.top, /Destroy
END
;-----
PRO Xplot_Cleanup, id
    Widget_Control, id, Get_UValue=info
    IF N_Elements(info) NE 0 THEN Obj_Destroy, info.thisContainer
END
;-----
PRO XPlot_Draw_Widget_Events, event
    Widget_Control, event.top, Get_UValue=info, /No_Copy
    info.thisWindow->Draw, info.plotView
    Widget_Control, event.top, Set_UValue=info, /No_Copy
END
;-----
PRO XPlot_Resize_Events, event
    Widget_Control, event.top, Get_UValue=info, /No_Copy
    info.thisWindow->SetProperty, Dimension=[event.x, event.y]
    info.thisWindow->Draw, info.plotView
    Widget_Control, event.top, Set_UValue=info, /No_Copy
END
;-----
PRO logticks_demo, Group_Leader=group

xdatarange = [0.00052316598, 0.073974366]
ydatarange = [0.0026925600 , 4.7218197e+22]

xdatamin = xdatarange[0]
ydatamin=ydatarange[0]

xAxis1 = Obj_New("IDLgrAxis", 0)
yAxis1 = Obj_New("IDLgrAxis", 1)

plotModel = Obj_New('IDLgrModel')
plotModel->Add, xAxis1
plotModel->Add, yAxis1

plotView=obj_new('IDLgrview', PROJECTION=1,
VIEWPLANE_RECT=[-0.5,-0.5,2.0,2.0])
plotView->Add, plotModel

xmin=xdatamin
ymin=ALOG10(ydatamin)

xAxis1->SetProperty, MINOR=-1, LOCATION=[0,ymin,0], /EXACT,
RANGE=xdatarange
yAxis1->SetProperty, MINOR=-1, LOCATION=[xmin,0,0], /EXACT, /LOG,
RANGE=ydatarange

```

```

yAxis1->GetProperty, CRANGE=crange
ymin=crange[0]
ymax=crange[1]
ylength=ymax-ymin

xAxis1->GetProperty, CRANGE=crange
xmin=crange[0]
xmax=crange[1]
xlength=xmax-xmin

plotModel->Scale, 1.0/xlength, 1.0/ylength, 1.0
plotModel->Translate, -(xmin/xlength),-(ymin/ylength),0.0

xAxis1->SetProperty, TICKLEN=0.05*ylength
yAxis1->SetProperty, TICKLEN=0.05*xlength

tlb = Widget_Base(Column=1, Title='Ticks on Log Axes Example', $
    TLB_Size_Events=1, MBar=menubase)

filer = Widget_Button(menubase, Value='File', /Menu)
b = Widget_Button(filer, /Separator, Value='Exit', $
    Event_Pro='XPlot_Exit')

drawID = Widget_Draw(tlb, XSize=400, YSize=400, Color_Model=0, $
    Graphics_Level=2, Expose_Events=1, Retain=0, $
    Event_Pro='XPlot_Draw_Widget_Events')

Widget_Control, tlb, /Realize
Widget_Control, drawID, Get_Value=thisWindow

thisWindow->Draw, plotView

thisContainer = Obj_New('IDL_Container')
thisContainer->Add, thisWindow
thisContainer->Add, plotView
thisContainer->Add, xaxis1
thisContainer->Add, yaxis1

info = { thisWindow:thisWindow, $
    thisContainer:thisContainer, $
    plotView:plotView      }

Widget_Control, tlb, Set_UValue=info, /No_Copy

XManager, 'xplot', tlb, Cleanup='XPlot_Cleanup', Group_Leader=group, $
    Event_Handler='XPlot_Resize_Events', /No_Block

```

END

;-----
